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of a part of the rim of a crater in existence before the construction of the present cone.

The map shown in connection with the paper was prepared by M. Léon Leboucher for the Club des Montagnards of Guadeloupe. This club has recently celebrated the first anniversary of its founding, and its report shows that it has done a great deal in a short time toward the opening up of roads and paths to the Soufrière, making the highest and one of the most interesting mountains of the Lesser Antilles readily accessible to visitors.

EDMUND OTIS HOVEY,
Secretary.

DISCUSSION AND CORRESPONDENCE.

THE METRIC SYSTEM.

TO THE EDITOR OF SCIENCE: Permit me to differ from Mr. William Kent as to the conclusion to be drawn from Professor W. Le Conte Stevens's article on the metric system. If he will substitute for the word 'impossibility' the word 'possibility' I shall be glad to agree that Professor Stevens's 'article is useful, however, in showing the possibility of the general adoption of the metric system in its present form by the people of this country.' There seems to be every probability that one will not have to live to be very old in order to see by experience this possibility become a fact, in this country as well as in England, which now seems likely to precede us in this reform, as she has in various political ones. I can not share the desire of Professors Lane and Stevens to temper the metric system to the conservatism of the American people by adopting its values disguised in the sheep's clothing of the present non-system. I believe that the intelligence of our people is not insufficient to enable them to drink their milk by the liter with as much gusto as by the quart, and to realize that six cents a liter is six dollars a hectoliter, even if a Greek prefix is involved. It takes a bold man to assert that the American people can not do what the French and Germans have done, and that they will not be able to see the advantage of it. If 'the people can not be compelled to adopt a nomenclature that is thrust upon them as a substitute for that to which they have always

been accustomed' we should have no decimal system of currency to-day, for the people were very much accustomed to pounds, shillings and pence, but seem to have been willing to be compelled to adopt dollars and cents (what an outrageous, foreign, difficult Latin word!), and in fact, seem even to prefer them. Is the inch more sacred than the pound? The engineer will reply, yes, and here we come to the kernel of the whole matter. It is the mechanical engineers and builders of machine tools who are delaying the adoption of the metric system. Now, while these persons constitute a very important part of the community, they do not constitute the whole of it. Drills, taps and dies, rigs and jigs are not the only argument that should be brought into the question, although engineers would have us believe it. Of course, it will cost us something to change our system, and this is a visible item. It is costing us more not to change it, but this is not so visible. I do not care to go into the arguments here, but merely to protest against the argument from conservatism, and also to suggest that the best way to find out the facts about the metric system is to apply, not to the engineers, who have not used it, but to the scientific men who have used it. The attitude of the conservative engineer toward changing the system of measurement is very similar to that of Cæsar toward the Senate: 'Can not is false, and that I dare not, falsar; I *will* not' change.

ARTHUR GORDON WEBSTER.

ZOOLOGY AND THE INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE.*

This work has just come into my hands and I have examined it for references on the subject to which most of my attention is given, viz., Cœlenterata. The data given below will indicate the value of the catalogue, so far as Cœlenterata are concerned, in comparison with two other well-known bibliographic undertakings, the 'Bibliographia universalis' of the Concilium Bibliographicum and the *Zoological Record*.

For the year 1901, the Concilium Biblio-

* 'The International Catalogue of Scientific Literature.' First Annual Issue, N, Zoology [for the year 1901]: 1904 (February).

graphicum has 155 entries (omitting 3 that should be credited to 1902, and adding one erroneously dated 1902). The *Zoological Record* for 1901 contains 153 titles. Of these 1 (54)* is for 1899; 11 (36, 39, 42, 44, 78, 117, 124, 128, 134, 140, 141) for 1900; and 1 (92) belongs to 1902, leaving 140 for 1901. The volume for 1902 furnishes 5 for 1901.

The 'International Catalogue' for 1901 contains 92 references, at least 3 of which belong to 1902, leaving 89.

There are in my own card catalogue for 1901 222 entries. Of these:

	Entries.
The Concilium Bibliographicum published....	155
The <i>Zoological Record</i> for 1901 adds.....	54
The 'International Catalogue' for 1901 adds..	7
Collected by myself and not in any of the preceding	6
	222

The Concilium Bibliographicum procured 70 per cent. of the references; the *Zoological Record* for 1901† 63 per cent.; and the 'International Catalogue' 40 per cent.

Thus it will be seen that the 'International Catalogue' contains less than half the references on this subject, and that two other far superior bibliographies are being published.

It is scarcely necessary to cite specific omissions. Works of importance published in practically every country are left out, England, Canada, Australia, the United States, Russia, Germany, etc. If other zoological subjects can be judged by the Cœlenterata, to make the 'International Catalogue' of any special value the work must be done much more thoroughly, and should appear with reasonable promptness.

T. WAYLAND VAUGHAN.

WASHINGTON, D. C.,
May 13, 1904.

NON-EDUCATION OF THE YOUNG BY PARENTS.

SOME of our new nature students appear to think that it is necessary that the young of

* These numbers in parentheses are those prefixed to the papers in the list of titles of the *Zoological Record*.

† The additions made in 1902 are not included in calculating this percentage.

animals should be taught to take care of themselves by their parents, or, at least, that they shall learn by example. While glancing over some of the controversial articles on the subject that have lately appeared, some cases that bear directly on the question came up to memory.

There are a few 'annual' fishes whose entire cycle of life is performed within a year. Professor Robert Collett, of Christiania, in 1878, recorded the biographies of a couple of those which are quite common in Europe. They belong to the family of gobies or gobiids and are the *Aphyia pellucida* and *Crystallogobius nilssonii*.

Although very distinct in their generic as well as specific characters, they agree in their physiological characteristics. From June to August they are at the height of their sexual maturity and males are trenchantly differentiated from females. After spawning they 'seem always to keep together in enormously large shoals' and are the easy victims of innumerable other fishes, large and small. Before winter supervenes they are supposed to have all died off; 'it is probable that no specimen lives more than one year and after the close of the breeding-time [everyone] dies without living through another spawning; consequently, these fishes are really annual vertebrates.' The species as represented by adults become extinct annually and are only represented by eggs. Where then are the teachers or exemplars?

A more familiar group of fishes furnishes us with an analogous case of death after spawning, though perhaps less striking than that of the annual gobiids; that group is the genus *Oncorhynchus*, including the hook-nosed salmons of the west coast. All the American species—five in number—have their alimentary canal so shrunk and defunctionalized soon after their entrance into fresh water that they can not assimilate food, and besides they literally become worn out and used up, so that soon after spawning and milting they die; not one lives to go to salt water and return to fresh again. Consequently the young can not have the benefit either of parental instruction or of learning through